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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,591	10/12/2001	Tao Chen	020020	2233

23696 7590 01/16/2009  
QUALCOMM INCORPORATED  
5775 MOREHOUSE DR.  
SAN DIEGO, CA 92121

EXAMINER
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HOM, SHICK C

ART UNIT	PAPER NUMBER
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2416

NOTIFICATION DATE	DELIVERY MODE
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01/16/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us-docketing@qualcomm.com  
kascanla@qualcomm.com  
nanm@qualcomm.com

<b>Office Action Summary</b>	<b>Application No.</b> 09/976,591	<b>Applicant(s)</b> CHEN ET AL.	
	<b>Examiner</b> SHICK C. HOM	<b>Art Unit</b> 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 8, 11, 13-18, 20-32, 34, 36-47 and 49-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8, 11, 13-18, 20-25, 36-47 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 26-32 and 34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments filed 10/29/08 have been fully considered but they are not persuasive.

In pages 10-11 of the remarks, applicant argued that Jeong et al. in view of Christopher et al. do not teach the multiplexing function being performed on the content of a plurality of buffers because they fail to disclose or suggest the plurality of buffers is not persuasive because a buffer is merely a device or area used to store data temporarily and deliver at a rate different from that at which it was received clearly the encoders 11-14 reads on the buffers. Applicant argued that it is not clear which interleaver 40 or 60 should be replaced with the multiplexer of Christopher, Clearly both should be replaced as claimed because an interleaver is a device which is used to transmit pulses from two or more digital source in time-division sequence over a single path and likewise an multiplexer is a device which allows tow or more signals to pass over one circuit or path.

***Claim Rejections - 35 USC § 103***

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2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-5, 7, 26-32, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong et al. (2002/0080887) in view of Christopher et al. (5,351,087).

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Regarding claims 1, 4-5, 7, 26, and 31-32:

Jeong et al. disclose the encoding method for reducing decoding complexity, the method comprising: encoding systematic bits of a bit stream in each of a plurality of buffers with a first code, the first code being an outer code; interleaving content of the plurality of buffers from the bit stream; and encoding said interleaved content with a second code to provide a set of frames, wherein the encoding said interleaved content comprises identifying a block of bits to be encoded and then coding the block of bits with the second code, the second code being an inner code (the abstract recite an outer coding unit for performing a first encoding, thereby generating an outer encoded signal; an outer interleaving unit for performing interleaving of the outer encoded signal a byte by byte basis, thereby generating an outer interleaved signal; an inner coding unit for performing a second encoding the outer interleaved signal, thereby generating an inner encoded signal and paragraph 0061 recite the FIFO register clearly anticipate the first and second code and the buffer as claimed).

Regarding claims 2-3 and 29-30:

Jeong et al. disclose wherein said encoding systematic bits in each of the plurality of buffers with a block code and with a

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Reed-Solomon code (paragraph 0056 recite the use of Reed-Solomon block coding).

Regarding claims 27-28:

Jeong et al. disclose wherein each of said plurality of buffers is configured to store systematic bits and parity bits and wherein each of said plurality of encoders is configured to encode systematic bits to provide parity bits (paragraph 0095 recite the parity bits as claimed).

Jeong et al. disclose all the subject matter of the claimed invention with the exception of wherein the interleaver being a multiplexer and a block of bits received from said multiplexer as recited in claims 1, 26, 34.

Christopher et al. from the same or similar fields of endeavor teach that it is known to provide wherein the interleaver being a multiplexer (the abstract recite the multiplexer being used to interleave signals).

Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide wherein the interleaver is a multiplexer as taught by Christopher et al. in the apparatus and method of Jeong et al.

The interleaver being a multiplexer can be implemented by substituting the multiplexer of Christopher et al. for the interleaver of Jeong et al. The motivation for substituting the

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multiplexer as taught by Christopher et al. in the apparatus and method of Jeong et al. being that it provides a well-known mean and method of interleaving signals in Jeong et al.

***Allowable Subject Matter***

4. Claims 8, 11, 13-18, 20-25, 36-47, 49-54 are allowed.

***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHICK C. HOM whose telephone number is (571)272-3173. The examiner can normally be reached on Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pham Chi can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Chi H Pham/  
Supervisory Patent  
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